Claims 1 – 41 (CANCELLED)

Claim 42 (CURRENTLY AMENDED) A method of depositing gold at one or more sites on a substrate, comprising:

(a) providing nucleation centers at said one or more sites on the substrate, wherein said nucleation centers are each coupled to a first member of a recognition group, wherein said recognition group additionally comprises at least a second member capable of binding to the first member of the recognition group, wherein the second member of the recognition group includes or forms said one or more sites, and is bound to the first member of the recognition group, said nucleation centers being selected from the group consisting of a metal particle, a cluster containing metal atoms, a metal-containing complex and molecules containing metal atoms;

(b) providing a treatment composition which comprises a soluble gold-providing agent and is kinetically stable so that gold is not deposited unless a nucleation center is present, and wherein said treatment composition comprises an aqueous solution and said gold-providing agent is $Au^1(SCN)_2$; and

(c) contacting said one or more sites with the treatment composition, whereby gold atoms are released from said gold-providing agent and deposited onto said nucleation center to form gold metal deposits at said one or more sites.

Claim 43 (PREVIOUSLY PRESENTED) A method according to Claim 42, wherein the first member of the recognition group is coupled to at least one nucleation center, wherein the nucleation center is selected from one or more of the group consisting of a cluster containing metal atoms, metal containing complexes, and metals.

Claim 44 (PREVIOUSLY PRESENTED) A method according to Claim 42, wherein the first member of the recognition group is coupled to at least one nucleation center, wherein the nucleation center is selected from one or more of the group consisting

of a gold particle, a cluster containing gold atoms, and gold-containing complexes and molecules.

Claim 43 (PREVIOUSLY PRESENTED) A method according to Claim 42, wherein the first member of the recognition group is coupled to at least one nucleation center, wherein the nucleation center is selected from one or more of the group consisting of a cluster containing gold atoms, and gold-containing complexes and molecules.

Claim 44 (PREVIOUSLY PRESENTED) A method according to Claim 42, wherein said recognition group is selected from the group consisting of an antigen and an antibody or an antibody derivative with an antigen-binding domain, sugar and a lectin, a receptor and a ligand, a nucleotide sequence and a complementary nucleotide sequence, a nucleotide sequence and its binding protein or other specific binding agent, biotin and avidin or streptavidin, cellulose or chitin and cellulose binding domain.

Claim 47 (CANCELLED)

Claim 48 (CANCELLED)

Claim 49 (CURRENTLY AMENDED) A method according to Claim 48 42, wherein said treatment composition further comprises a reagent selected from the group consisting of hydroquinone and naphtohydroquinone.

Claims 50 - 84 (CANCELLED)

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